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MOHADDES, LADAN	

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KARL J. HALTINER, JR. and
CHARLES J. BADURA

Appeal 2015-005678
Application 12/538,964
Technology Center 1700

Before ADRIENE LEPIANE HANLON, CATHERINE Q. TIMM, and JAMES C. HOUSEL, *Administrative Patent Judges*.

PER CURIAM.

DECISION ON APPEAL[1]

STATEMENT OF THE CASE

Appellants[2] filed an appeal under 35 U.S.C. § 134 from the Examiner's decision finally rejecting claims 1–6 and 10–12[3] under

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[1] Our decision refers to Appellants' Specification filed Aug. 11, 2009 (Spec.), Appellants' Appeal Brief filed Nov. 3, 2014 (Br.), and the Examiner's Answer mailed Apr. 13, 2015 (Ans.).

[2] Appellants identify the real party in interest as Delphi Technologies, Inc. Br. 3.

[3] Claims 7–9 have been withdrawn from consideration and are not before us on appeal. Br. 3.

35 U.S.C. § 102(b) as anticipated by Haltiner.[4] We have jurisdiction under 35 U.S.C. §§ 6(b) and 134(a).

We REVERSE.

The claims on appeal are directed to modular fuel cell units (*see, e.g.*, claims 1 and 10). Appellants disclose that the solid oxide fuel cell units of the prior art used "thin sheet metal plates that are stamped and formed, then joined together with a metallurgical bond (laser weld) to form a hollow shell containing the thin fuel cell element." Spec. p. 1, ll. 26–29. However, the formed parts have low rigidity and were prone to significant dimensional changes at operating temperatures. Spec. p. 1, l. 26 to p. 2, l. 3. To address this problem, reinforcing parts were added, but this resulted in an increase of mass and cost of the cell unit. Spec. p. 2, ll. 3–8. Further, the subassembly of the fuel cell unit is a load bearing unit that can induce shear stresses in the fuel cell, which can lead to fuel cell damage and reduced fuel cell efficiency. Spec. p. 2, ll. 8–11. According to Appellants, their invention is directed to an improved arrangement of plates for a fuel cell unit that isolate the fuel cell from thermal and compressive stresses induced in the metal components of the unit and eliminate the use of internal reinforcements. Spec. p. 2, ll. 12–15, 26–29.

Independent claim 1 is illustrative of the subject matter on appeal. Claim 1 is reproduced from the Claims Appendix of the Appeal Brief:

> 1. A modular fuel cell unit for use in forming a solid oxide fuel cell stack having a plurality of such repeating modular units, comprising:
>
> a) a planar cathode plate defining a cathode plate surface;
>
> b) a planar separator plate defining first and second separator plate surfaces, wherein said first separator plate surface

[4] Haltiner, Jr. et al., US 7,270,906 B2, issued Sept. 18, 2007 ("Haltiner").

> is parallel to said second separator plate surface and wherein said first separator plate surface is disposed adjacent to and facing toward said cathode plate surface;
>
> c) a planar anode plate defining an anode plate surface and a contiguous surface parallel to said anode plate surface, wherein said anode plate surface is disposed adjacent to and facing toward said second separator plate surface;
>
> d) a cell retainer having a formed opening, said cell retainer defining a cell retainer surface around said formed opening, wherein said cell retainer surface is disposed adjacent to and facing toward said contiguous surface; and
>
> e) a solid oxide fuel cell disposed adjacent said contiguous surface in said formed opening and captured physically between and positioned directly between said cell retainer and said contiguous surface.

Br. 13. Claim 10 is similarly limited.

OPINION

The Examiner finds Haltiner discloses a planar solid oxide fuel stack comprising, among other things, a fuel cell, cathode and anode plates, a planar separator plate, and a seal that functions as a cell retainer, citing Figures 1–10 of Haltiner. Ans. 2. In particular, the Examiner finds Figures 8 and 9 disclose one feature recited in claim 1 (i.e., a planar separator plate having two parallel surfaces respectively adjacent anode and cathode plates) and finds Figure 7 discloses another feature of claim 1 (i.e., a fuel cell being disposed adjacent a surface of a planar anode plate). Ans. 3.

However, analysis of the disclosure of Haltiner reveals Figures 7, 8, and 9 to be different embodiments of fuel cell modules. Haltiner discloses that the plates of a module (i.e., elements 36', 38', 64) "may be assembled (joined) in any order or combination which suits the assembly process."

Haltiner col. 4, ll. 60–63. Further, upon examining the modules depicted in Figures 7, 8, and 9, one of ordinary skill in the art would understand that Figures 7, 8, and 9 present different orders or combinations for the elements of a fuel cell module. Figure 7 of Haltiner is reproduced below.

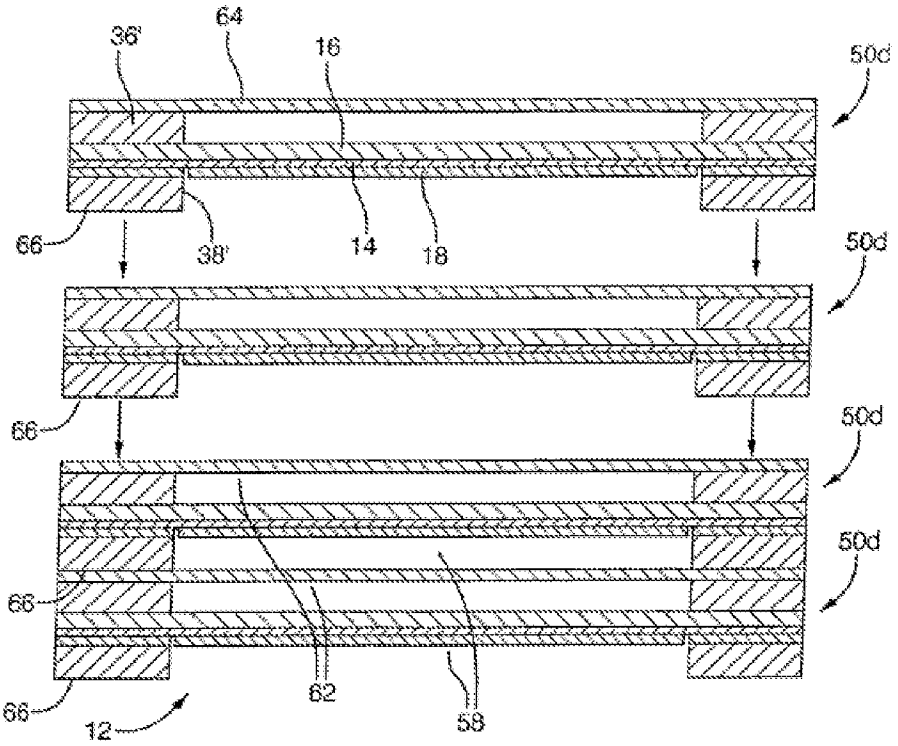

FIG. 7

Figure 7 is a cross-sectional view of fuel cell modules stacked together.

Figure 7 depicts fuel cell modules stacked together to form a fuel cell stack. Haltiner col. 3, ll. 24–26. In Figure 7, each module 50d includes a separator plate 64, an anode spacer 36', a cathode spacer 38', and a combination of an electrolyte 14, anode 16, and cathode 18 to provide a fuel cell. Haltiner col. 3, ll. 44–48; col. 4, 17–20, 40–41, 50–51; col. 5, ll. 9–17.

As shown in Figure 7 above, the separator plate 64 is located on top of the anode spacer 36', which is located on top of the anode 16, electrolyte 14,

and cathode 18, and the cathode spacer 38' is located on the bottom of the module. For comparison, Figure 8 of Haltiner is reproduced below.

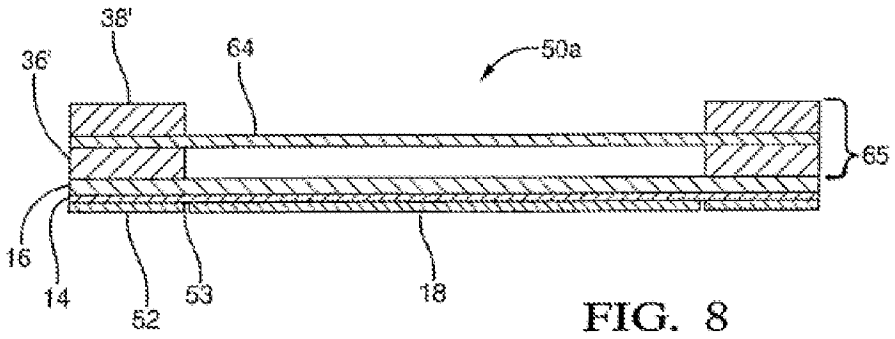

FIG. 8

Figure 8 is a cross-sectional view of a fuel cell module.

As shown in Figure 8, the cathode spacer 38' is on top of the separator plate 64, which is located on top of the anode spacer 36', with the anode 16, electrolyte 14, and cathode 18 located on the bottom of the module. Thus, the order of how the elements are stacked within the module of Figure 8 differs from the order of the same elements in Figure 7. Figure 9 of Haltiner is reproduced below for further comparison.

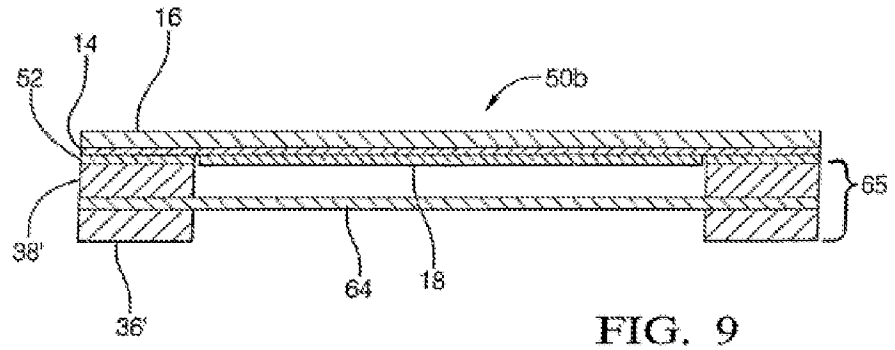

FIG. 9

Figure 9 is a cross-sectional view of a fuel cell module.

In Figure 9 the anode 16, electrolyte 14, and cathode 18 are on top, the cathode spacer 38' is below, and the separator plate 64 and anode spacer 36' are under the cathode spacer 38'. This arrangement of fuel cell module elements differs from the arrangements of Figures 7 and 8. Moreover, the disclosure of Haltiner confirms Figures 8 and 9 are embodiments having different arrangements by stating Figure 8 is a "fuel cell module according to the invention wherein the outer members are the anode and anode spacer" while Figure 9 is "a fuel cell module according to the invention wherein the outer members are the anode spacer and the separator." Haltiner col. 3, ll. 27–32.

"To anticipate a claim, a prior art reference must disclose every limitation of the claimed invention, either explicitly or inherently." *In re Schreiber*, 128 F.3d 1473, 1477 (Fed. Cir. 1997); *see also In re Schaumann*, 572 F.2d 312, 315 (CCPA 1978) (prior art reference must identify each and every element in the claim "'with sufficient specificity to constitute a description thereof within the purview of 35 USC 102(b)'"). As stated in *In re Arkley*, 455 F.2d 586, 587–88 (CCPA 1972):

> [F]or the instant rejection under 35 U.S.C. § 102(e) to have been proper, the [prior art] reference must clearly and unequivocally disclose the claimed [invention] or direct those skilled in the art to the [invention] without *any* need for picking, choosing, and combining various disclosures . . . . Such picking and choosing may be entirely proper in the making of a 103, obviousness rejection, where the applicant must be afforded an opportunity to rebut with objective evidence any inference of obviousness . . . , but it has no place in the making of a 102, anticipation rejection.

Here, the Examiner rejects claim 1 by picking and choosing from amongst the various embodiments of Haltiner, namely those of Figures 7, 8,

and 9. This is not proper for an anticipation rejection under 35 U.S.C. § 102. Accordingly, the Examiner's rejection of claims 1–6 and 10–12 over Haltiner is not sustained.

DECISION

The Examiner's decision is reversed.

REVERSED